

## CRYPTOSPORIDIOSIS

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### What is Cryptosporidiosis?

Cryptosporidiosis is a parasitic infection caused by the protozoan *Cryptosporidium parvum*. Infectious oocysts (the state in the parasite's life cycle when the organism is surrounded by a protective shell) of *C. parvum* are small. They can survive for months in soil under cool dark conditions, for up to a year in low-turbidity water, and are more resistant to chemical agents (including chlorine) than the majority of protozoa. Infectivity appears to cease when oocysts are frozen, freeze-dried, boiled, or heated to 140 or above for 5 to 10 minutes.

### Who gets Cryptosporidiosis?

Anyone can get Cryptosporidiosis. *Cryptosporidia* have been associated with illness worldwide, including several waterborne outbreaks in the United States and the United Kingdom. Groups at increased risk for infection include animal handlers, travelers, homosexual men, and close personal contacts of infected individuals (families, daycare and healthcare workers). Peak infection rates occur in the young and decrease progressively with age.

### How is Cryptosporidiosis transmitted?

*Cryptosporidia* have been found in many hosts, including man, cattle and other domestic mammals. In order for infection to occur, the susceptible host must ingest water or other materials contaminated with the *Cryptosporidium* oocysts. As such, important routes of transmission include person-to-person, fecal-oral, animal-to-person, and waterborne.

### What are the symptoms of Cryptosporidiosis?

Common symptoms include profuse, watery diarrhea, low grade fever, abdominal pain and weight loss. In immunocompetent people (including children), the illness is self-limited, lasting 1 to 20 days (average 10 days). However, in immunodeficient patients, especially those with AIDS, chronic infection may cause severe diarrhea, malnutrition, dehydration and possibly death. Although infection is usually limited to the gastrointestinal tract, disseminated infection has occurred in immunodeficient patients.

### How soon after infection do symptoms appear?

Symptoms appear 2 to 14 days after exposure (average 7 days).

### How long can an infected person spread the disease?

Oocysts appear in the stool when symptoms first begin and continue to be excreted for several weeks after symptoms resolve. Scientists have not yet established whether immunity is conferred by infection, though second

infections have not been reported.

## What is the treatment for Cryptosporidiosis?

Other than rehydration and correction of electrolyte abnormalities, no effective therapy exists.

## Do people with Cryptosporidiosis need to be excluded from work or school?

Any child with diarrhea should be excluded from daycare until symptoms have resolved. Additionally, exclusion of symptomatic individuals from foodhandling and from direct care of hospitalized/institutionalized patients should occur. Physicians and caregivers should place an emphasis on the importance of handwashing and personal hygiene.

## How is Cryptosporidiosis diagnosed?

Cryptosporidiosis is usually diagnosed by laboratory examination of stool samples. However, the organism can also be identified in intestinal biopsy sections. Since the infectious oocysts are excreted from the body intermittently, at least two stool samples should be examined before the test can be considered negative.

## How do I avoid getting Cryptosporidiosis?

Always wash hands thoroughly with warm, soapy water before and after changing diapers, handling food, using the toilet and after playing with pets.

- **Do not** drink water directly from lakes, rivers, or other untreated sources.
- During a waterborne outbreak in which a "Boil Water Advisory" is issued, boiling water for at least three minutes will eliminate the risk of acquiring Cryptosporidiosis.

## Should HIV infected and immunodeficient people take special precautions to prevent infection?

The risk for acquiring this infection during a non-outbreak setting is uncertain and current data are inadequate to make recommendations regarding drinking tap water under normal conditions. Severity of illness is correlated with the level of an individual's immunosuppression. However, immunodeficient people may wish to consider independent actions which may reduce the risk of waterborne Cryptosporidiosis:

- For all water consumption purposes, boil water at least three minutes before using (for elevations above 8,500 feet, boil for five minutes). This includes water used for brushing teeth, making ice cubes, washing food, etc. As an alternative to boiling water, some commercially available home water filtration units are considered effective against *Cryptosporidium*. While using bottled water might appear as an alternative, it is not routinely tested for *Cryptosporidium* and caution should be exercised when selecting a product. Contact the bottler for details on processing. (The decision to implement the preceding suggestions should be made in conjunction with a health care provider).
- When in restaurants or other public facilities, avoid tap water, ice cubes and any other beverage that is not canned or bottled.
- Make sure that eating and cooking materials washed in tap water are thoroughly dry before they are used.

- Avoid swallowing pool or bath water.

**Where can I get more information?**

- Your personal doctor
- Your local health department, listed in the telephone directory
- The Utah Department of Health, Bureau of Epidemiology (801) 538-6191 or Bureau of HIV/AIDS (801) 538-6096
- The Department of Environmental Quality, Drinking Water Division (801) 536-4205
- The National Center for Infectious Diseases (NCID) has a VoiceCom number which provides audio information on cryptosporidiosis. The number is (404) 330-1242.

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